

exemplar is the mathematician Sophie Kovalevsky: born into the White Russian minor aristocracy, she studied algebra in secret by night, while her governess slept. There was never any question of a university education, but she had the good luck to find a patron, the German mathematician Weierstrass, who set aside his innate misogyny in the face of her evident brilliance. During her short and tempestuous life she gave herself only intermittently to mathematics and was toying with a plan to turn novelist when she died of pneumonia at the age of 41, her last sibylline words, "too much happiness". Bernstein hazards that Kovalevsky lacked the intensity of purpose that alone will liberate genius. Was it, as Einstein (appearing once more at Bernstein's shoulder) asserted, a feminine trait? We dare not even contemplate it; and besides, here is Einstein's reply to the sister of his close friend, Michele Besso, who wanted to know why her brother had made no famous discoveries in mathematics. "*Aber*, Frau Bice, this is a very good sign. Michele is a humanist, a universal spirit, too interested in too many things to become a monomaniac. Only a monomaniac gets what we commonly refer to as results". The melancholy implication is caught by W. B. Yeats:

The intellect of man is forced to choose
Perfection of the life or of the work.

Bernstein's view, which will outrage nobody, is that women are predisposed by social custom and the educational system to turn away from occupations that demand too narrow a focus; and, as that old reactionary, Dr Johnson, put it, "a man is generally better pleased when he has a good dinner on the table than if his wife speaks Greek".

Cranks, Quarks, and the Cosmos arrives finally at the cranks in an essay-review of Stephen Jay Gould's fizzing polemic *The Mismeasure of Man*. Bernstein sees off (as does Gould) the perpetrators of the soft and dark science that threw up a nexus between race and intelligence, and helped, in democracies as well as dictatorships, to legitimize much social evil. In this and in his other ruminations — on why for instance universities must teach science to *all* their students, not only to scientists (is there anyone listening in our academic groves and grooves?) and on why he did not become either a dean or a journalist — Bernstein's is the civilized voice of science. This is a wise, enlightened and entertaining discourse, and everyone will be the better for lending it an ear. □

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Advice matters

Harvey Brooks

Working with Congress: A Practical Guide for Scientists and Engineers. By William G. Wells Jr. *American Association for the Advancement of Science Press: 1992. Pp. 153. \$12.95 (pbk).*

THIS admirable volume was commissioned by the American Association for the Advancement of Science and the Carnegie Commission on Science, Technology, and Government. The author, William G. Wells, a professor of management science at George Washington University, is uniquely well qualified for the assignment, having served as chief of staff of the Office of Science and Technology Policy in the executive branch and as a staff director for key science subcommittees of the US House of Representatives, as well as an Air Force officer and a manager in NASA's Apollo programme. He worked on the guide with an *ad hoc* advisory committee of seven members, all with experience as staff members for congressional committees or congressional support agencies.

In the first half of the book, Wells describes the US governmental system with emphasis on the organization, procedures and personnel of Congress. The other half of the guide consists of specific do's and don'ts for scientists dealing with individual members of Congress or testifying before congressional committees. There is also a very useful glossary of terms relating to congressional procedures and offices, and several appendices of addresses and telephone numbers for key congressional committees and support offices, Washington offices of professional societies and some other relevant organizations.

The descriptive chapters include an excellent discussion of recent changes in congressional membership, committee staff and procedures, with mention of such important issues as the effects of divided government, the growth of staff and workload, the increased professionalization of staff, and the function and staffing of the principal congressional support agencies, such as the Office of Technology Assessment, the General Accounting Office, the Congressional Budget Office and the Library of Congress and its congressional information support arm, the Congressional Research Service. The modes of operation of all these offices are clearly and realistically explained.

The second part of the book is down to earth and practical, and is 'must' reading not only for scientists and engineers expecting to deal with Congress, but for almost any technical person

whose professional work is affected by government funding, regulation or policy. The message of this section comes through loud and clear. If scientists want to be taken seriously by congressmen, they must show that they not only understand the way Congress works and the pressures acting on individual congressmen, but also that they respect politics and the political process — especially the necessity of compromise among competing interests and political agendas. Scientists are expected to relate their policy proposals to the political agendas and constituency interests that are of daily concern to congressmen. This part of the book draws heavily on responses to postal questionnaires sent to congressmen and their staff and on extensive personal interviews, and is sprinkled with highlighted inserts quoting specific individuals, which bring home the general points in the text. A typical example is that of Senator P. Domenici: "In general we trust information from scientists. But to keep that trust you must clearly state which of your points is opinion, theory, or widely accepted fact." Wells also points out that there is a general "perception in the world of politics that a sizeable number of scientists and engineers believe they are 'above it all' and feel that being involved with politicians is inconsistent with the ethos of the scientific and engineering professions."

If I have any quarrel, it is that the author fails to distinguish sufficiently between situations in which scientists are interacting with Congress as advocates or critics of particular scientific research programmes ('policy for science') and where they are providing information or understanding relating to broader public policy issues in which technical input is important but not the sole consideration ('science for policy'). A little too much of the advice seems to be put forward with an implicit assumption that the scientist interacting with Congress is appearing on behalf of a particular scientific programme that he or she thinks is important, rather than trying to help inform a public policy decision in which science is only one consideration. It is unfortunate that this orientation of the discussion tends to reinforce the impression of many politicians that scientists can be treated as 'just another interest group'. Although this may sometimes be true, it is misleading to think of this as the principal role of scientists in the political process, even if the distinction between the two roles is not always completely sharp. □

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